III. AMENDMENTS TO THE DRAWINGS

None.

IV. REMARKS/ARGUMENTS

This paper is responsive to the Office Action mailed 07/09/2007, with claims 1-13 and 17-22 pending in the application. Independent claims 1 and 17 have been amended. No new matter has been added. Claims 1-13 and 17-22 remain in consideration.

Claims 1-12, 17 and 20-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Kato et al. (USPN 5,548,601), hereafter *Kato*, and further in view of Kidston et al. (USPN 5,615,933), hereafter *Kidston*. Claims 13, 18 and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA, in view of Kato, in view of Kidston, and further in view of Weiberle et al. (US 2003/0006726 A1), hereafter *Weiberle*.

Specifically with respect to claim 1, the Office Action essentially alleges that AAPA teaches all elements of claim 1 with the following exceptions and distinctions. Respecting applicant's claim 1 recitation of "a brake actuation control module having a non-bussed, hard-wired connection to each of the first and second supervisory controllers and the monitoring controller," the Office Action alleges that AAPA teaches a "brake actuation module in signal communication and adapted to provide a brake signal to each of the first and second supervisory controllers." The Office Action recognizes that AAPA "lacks a monitoring controller which is operatively connected to said controller bus and adapted to monitor the performance of said first supervisory controller, said second supervisor controller, said first brake control bus, and said second brake control bus."

In an attempt to fill in the recognized lack of a monitoring controller, the Office Action goes on to allege that Kato teaches

> the concept of *a monitoring controller 80, 85* which is operatively connected to said *controller bus Td1, Td2* and adapted to monitor the performance of said *first supervisory controller CPU1*, said *second*

> *supervisor [sic] controller CPU2*, said *first brake control bus Td1*, and said *second brake control bus TD2*, as shown in figure 5 and column 7, line 30, in order to improve the ability to detect fault in a brake system to provide more reliable control to the brake system.

The Office Action also alleges that Kato

> Shows monitoring controller 80, 85, *first and second supervisor controllers CPU1, CPU2*, each signally connected to *a brake actuation module U* in figures 1 and 3 of Kato. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Figure 1 of AAPA to include a monitoring controller such as taught by Kato in order to improve the ability to detect fault in a brake system to provide more reliable control to the brake system.

The Office Action recognizes that the intermediate combination of AAPA and the alleged teaching of Kato lacks a "non-bussed, hardwired connection for the brake actuation module" as set forth in applicant's claim 1. In an attempt to fill in the recognized lack of such a connection, the Office Action goes on to allege that

> Kidston teaches the concept of using a non-bussed, hard-wired connection in a brake control system wherein the brake control 66 is connected to the motor control 22 through dedicated lines (i.e. non-bussed, hard wired connection) 60, 62 and 64, especially 64 is designed to carry single bit signal, as stated in column 4, lines 7-15, in order to provide fast and reliable communication.

Finally, the Office Action concludes

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified AAPA's brake control system to employ a non-bussed, hard-wired connection in order to provide fast and reliable communication as taught by Kidston.

The words of a claim are to be given their plain meaning unless the plain meaning is inconsistent with the specification. **Chapter 2100, § 2111.01, M.P.E.P., Eighth Edition, Revision No. 5, August 2006.** "Claims are not to be read in a vacuum, and limitations

therein are to be interpreted in light of the specification in giving them their 'broadest reasonable interpretation'." *In re Marosi,* 710 F.2d 799, 802 218 USPQ 289, 292 (Fed. Cir. 1983) (quoting *In re Okuzawa,* 537 F.2d 545, 548, 190 USPQ 464, 466 (CCPA 1976)) (emphasis in original). Reading limitations from the specification into the claims is not permissible, but reading a claim in light of the specification is permissible. In fact, during patent examination, claims must be given their broadest reasonable interpretation, and such interpretation must be in light of the specification as it would be interpreted by one of ordinary skill in the art and must be consistent with the interpretation that those skilled in the art would reach. **Chapter 2100, § 2111, M.P.E.P., Eighth Edition, Revision No. 5, August 2006.**

In the first quoted section from the Office Action set forth above, dummy comparator 80 and watchdog circuit 88, collectively, are equated to monitoring controller (123) of applicant's claim 1. The interpretation of applicant's claim 1 in such a manner as to enable the application of Kato as set forth is unreasonable. One having ordinary skill in the art would, based solely on the plain meaning of "monitoring controller" in applicant's claim1, understand monitoring controller to correspond to more than merely a watchdog circuit or comparator alone or in combination. Moreover, interpretation in light of the specification, as it would be interpreted by one of ordinary skill in the art, would yield an interpretation by those skilled in the art that "monitoring controller" is functionally and structurally distinct from a mere watchdog circuit or comparator alone or in combination. To properly understand "monitoring controller" as set forth in applicant's claim 1, one cannot analyze the term in a vacuum and particularly apart from the immediately following language in the claim that further recites monitoring controller "which is operatively connected to said controller bus and adapted to monitor the performance of said first supervisory controller,

said second supervisory controller, said first brake control bus, and said second brake control bus." Furthermore, to properly understand "monitoring controller", one having ordinary skill in the art properly observes that it is structurally on par with the other "controllers" with which it is operatively connected via a controller bus. (See, e.g. paragraph [0018] "controllers 120,122,123, [comprise] a real time distributed computing system . . . are preferably substantially identical in construction with respect to their associated control hardware and components . . . are of conventional construction and well known, such as the Motorola PowerPC series of controllers. This construction may, for example, comprise two basic control units, a communication control unit (CCU) and a computing unit (CU)." Thus, one having ordinary skill in the art would understand "monitoring controller" to be at least significantly structurally distinct from a mere watchdog circuit or comparator alone or in combination as set forth in Kato and hence the watchdog circuit and comparator 80,85 fail to teach or suggest the monitoring controller (123) of applicant's claim 1. Nonetheless, in an effort to progress the present application toward allowance and issue, applicant has amended claim 1 to now recite "computer-based monitoring controller" which finds support at least in the already cited portions of applicant's specification. By this amendment, applicant's claim 1 is definitively placed outside of the scope of the asserted application of Kato with respect to "computer-based controller."

With continued reference to the first quoted section from the Office Action set forth above, Td1 and Td2 (dummy output terminal) of Kato are equated to controller bus (146) of applicant's claim 1. The interpretation of applicant's claim 1 in such a manner as to enable the application of Kato as set forth in the Office Action is unreasonable. One having ordinary skill in the art would, based solely on the plain meaning of "controller bus" in applicant's claim 1, understand controller bus to correspond to data transmission from one

controller to another. Moreover, such interpretation in light of the specification, as it would be interpreted by one of ordinary skill in the art, is consistent with the interpretation that those skilled in the art would reach. (See, e.g. controller bus 146 in Figures; paragraph [0015] "Supervisory controllers 120,122 and monitoring controller 123 are each in signal communication with one another through controller bus 146", paragraph [0020] "controller bus 146 [is] conventional data communication [bus], having associated communication protocols and communication interfaces"). Td1 and Td2, however, are not busses in any sense of the word as understood by one having ordinary skill in the art. Td1 and Td2 are clearly disclosed as "outputs" (i.e. dummy outputs). And while the dummy outputs may be represented by several methods (col. 7, lines 1-26), they are not controller busses which, as discussed above, has particular plain meaning as understood by one having ordinary skill in the art relating to signal and data communication among controllers. Thus, one having ordinary skill in the art would understand "controller bus" to be functionally and structurally distinct from the dummy outputs as set forth in Kato and hence the dummy outputs Td1 and Td2 fail to teach or suggest the controller bus (123) of applicant's claim 1.

Furthermore, the quoted section from the Office Action set forth above, Td1 and Td2 (dummy output terminal) of Kato are also equated to first brake control bus (142) and second brake control bus (144) of applicant's claim 1. This is clearly erroneous in as much as Td1 and Td2 of Kato have also been equated to the controller bus (146) of applicant's claim 1 as discussed herein above. A cursory examination of applicant's specification and drawings will reveal that the brake control busses (142, 144) and the controller bus (146) are separate and distinct. So, in addition to the applicability of the remarks herein above respecting the flaws in equating dummy output Td1 and Td2 with the controller bus (146) to the brake control busses (142, 144), it should be understood that the controller bus (146) and the brake

control busses (142, 144) are distinct elements of claim 1 and the assertion that any one structure of Kato (i.e. dummy outputs Td1, Td2) is equal to each and both is illogical. Thus, even if the Office persists in the equating of dummy outputs as busses, there is no reasonable, logical nor supportable basis for continued application of dummy outputs as equivalents of both structurally and functionally distinct controller bus (146) and brake control busses (142, 144) of applicant's claim 1.

In both the first and the second quoted sections from the Office Action set forth above, CPU1 and CPU2 (control units, FIG. 5) of Kato are equated to first and second supervisory controllers (120, 122). The interpretation of applicant's claim 1 in such a manner as to enable the application of Kato as set forth in the Office Action is unreasonable. One having ordinary skill in the art would, based solely on the plain meaning of "supervisory controller" in applicant's claim1, understand supervisory controller to correspond to a controller which not only implements control algorithms but additionally monitors implementation of the control algorithms. Moreover, such interpretation in light of the specification, as it would be interpreted by one of ordinary skill in the art, is consistent with the interpretation that those skilled in the art would reach. (See, e.g. paragraph [0019] "control modules 120,122 are supervisory, in that they provide control commands to and monitor the status of the implementation and performance of these control commands"). CPU1 and CPU2, however, are not supervisory in any sense of the word as understood by one having ordinary skill in the art. Applicant cannot identify any portion of Kato which describes such operation of CPU1 and CPU2. Thus, one having ordinary skill in the art would understand "supervisory controller" to be at least functionally distinct from the control units as set forth in Kato and hence the control units CPU1 and CPU2 fail to teach or suggest the supervisory controllers (120, 122) of applicant's claim 1. Nonetheless, in an effort to

progress the present application toward allowance and issue, applicant has amended claim 1 to now recite "to control and monitor" which finds support at least in the already cited portions of applicant's specification. By this amendment, applicant's claim 1 is definitively placed outside of the scope of the asserted application of Kato with respect to "supervisory controller."

With continued reference to the second quoted section from the Office Action set forth above, U (control system, FIGS. 1 and 3) of Kato is equated to brake actuation module (160) of applicant's claim 1. Applicant is entitled to consistent interpretations by the Office in the examination of the claims. The Office Action asserts that AAPA teaches "a brake actuation module in signal communication and adapted to provide a brake signal to each of the first and second supervisory controllers" and equates CPU1 and CPU2 (control units, FIG. 5) of Kato to first and second supervisory controllers (120, 122). (See, e.g. discussion herein above). Then, on the other hand, the Office Action asserts that U of Kato - which includes both CPU1 and CPU2 of Kato (See, e.g. col. 6, lines 39-43) - is equivalent to the brake actuation module. Applicant cannot reconcile how U (which includes CPU1 and CPU2 which are equated to first and second supervisory controllers (120, 122)) can be equated to brake actuation module (160) which is separate and distinct from first and second supervisory modules (120, 122). An assertion that U (including CPU1 and CPU2 (supervisory controllers)) is brake actuation module (160) (which is separate from supervisory controllers) is itself erroneous and ignores what is disclosed in Kato and ignores the manner in which applicant's claim 1 is set out which is also erroneous. In addition, interpreting claim limitations (or reference applied to support rejection of the claims) inconsistently is also erroneous.

For these reasons, and further in view of the amendments made to claim 1, applicant respectfully requests withdrawal of the rejections of claim 1 and that same be allowed to proceed to issue.

Claims 2-13 depend from and share the limitations of claim 1. Claims 2-13 set forth additional limitation. For these reasons, in addition to the remarks and amendments set forth herein respecting claim 1, claims 2-13 are believed to also be allowable and respectfully request that same be allowed to proceed to issue.

Claim 17 materially repeats the same reasons for rejection as claim 1 and relies materially upon the same flawed interpretations of applicant's claim limitations and applied references as discussed in detail herein above. Claim 17 has been amended in a manner materially similar to the amendments made to claim 1. The remarks set forth above with respect to the rejection of claim 1, therefore apply with equal weight to the rejection of claim 17. For these reasons, applicant respectfully requests withdrawal of the rejections of claim 17 and that same be allowed to proceed to issue.

Claims 18-22 depend from and share the limitations of claim 17. Claims 18-22 set forth additional limitation. For these reasons, in addition to the remarks and amendments set forth herein respecting claim 1 and applicable with equal weight to claim 17, claims 18-22 are believed to also be allowable and respectfully request that same be allowed to proceed to issue.

Conclusion

All claims 1-13 and 17-22 are believed to be in condition for allowance and such allowance is respectfully solicited.

The Examiner is encouraged to contact the undersigned attorney at the phone number appearing below if any questions remain subsequent to considering this response.

Any fees associated with this response may be charged to General Motors Deposit Account No. 07-0960.

Respectfully submitted,

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